# 2016 MD DNR Stream Monitoring Locations

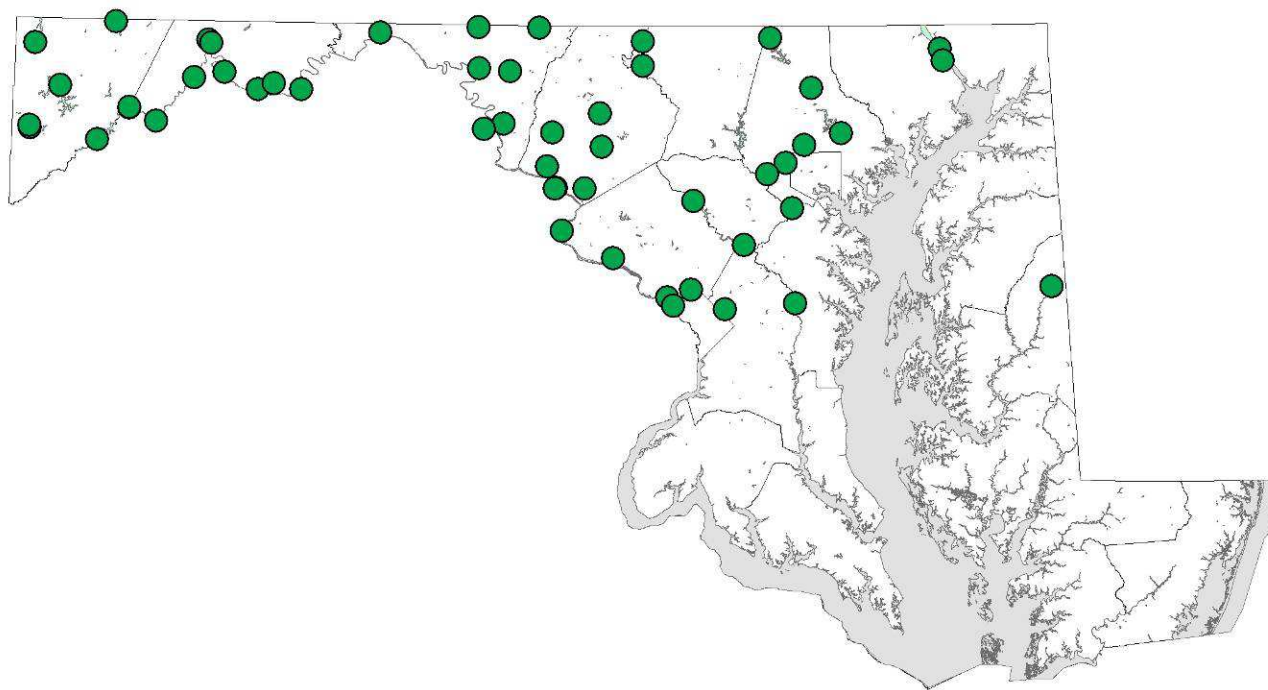Michael Kashiwagi

MWMC Stream Round Table
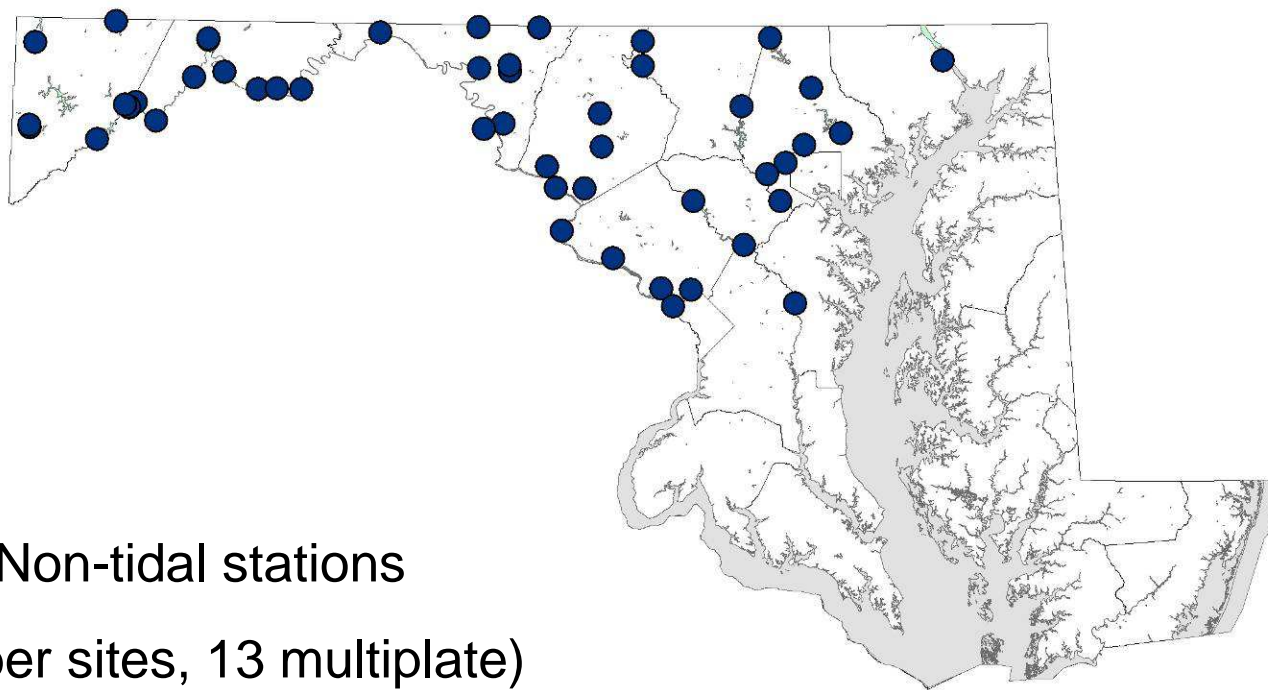
February 19, 2016

# Core Trend – Water Chemistry



52 Non-tidal monthly stations
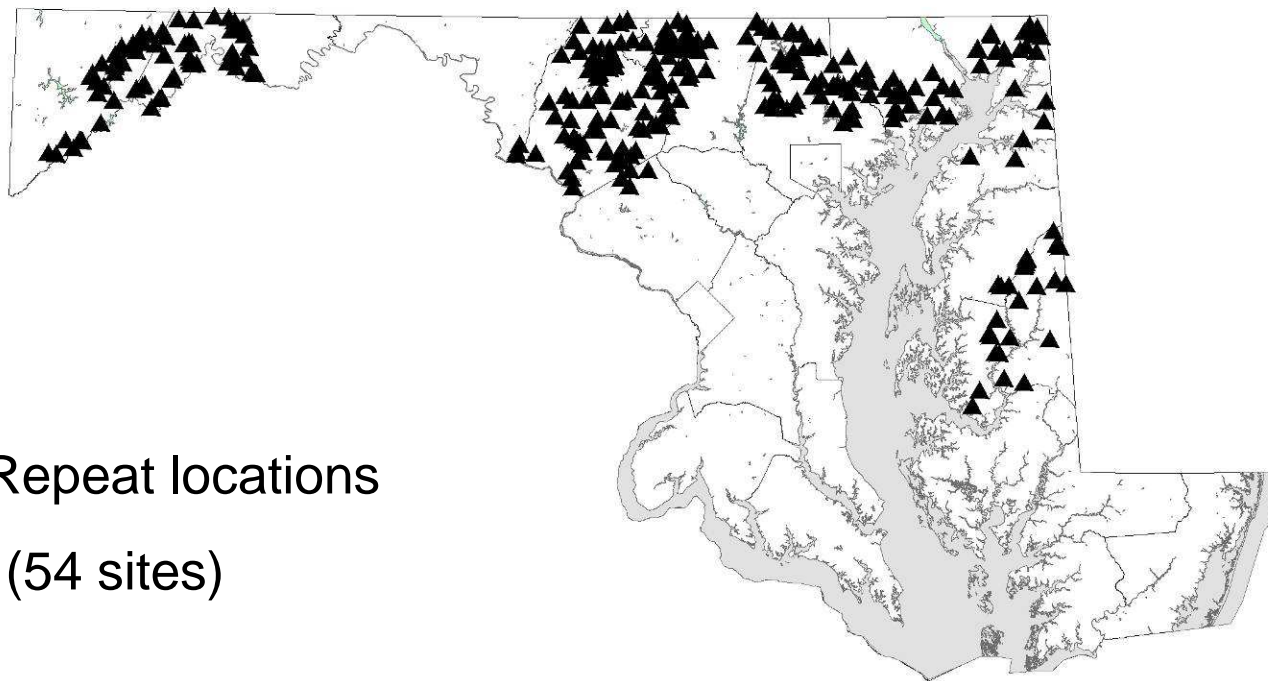
# Core Trend – Benthic Macroinvertebrate Taxa
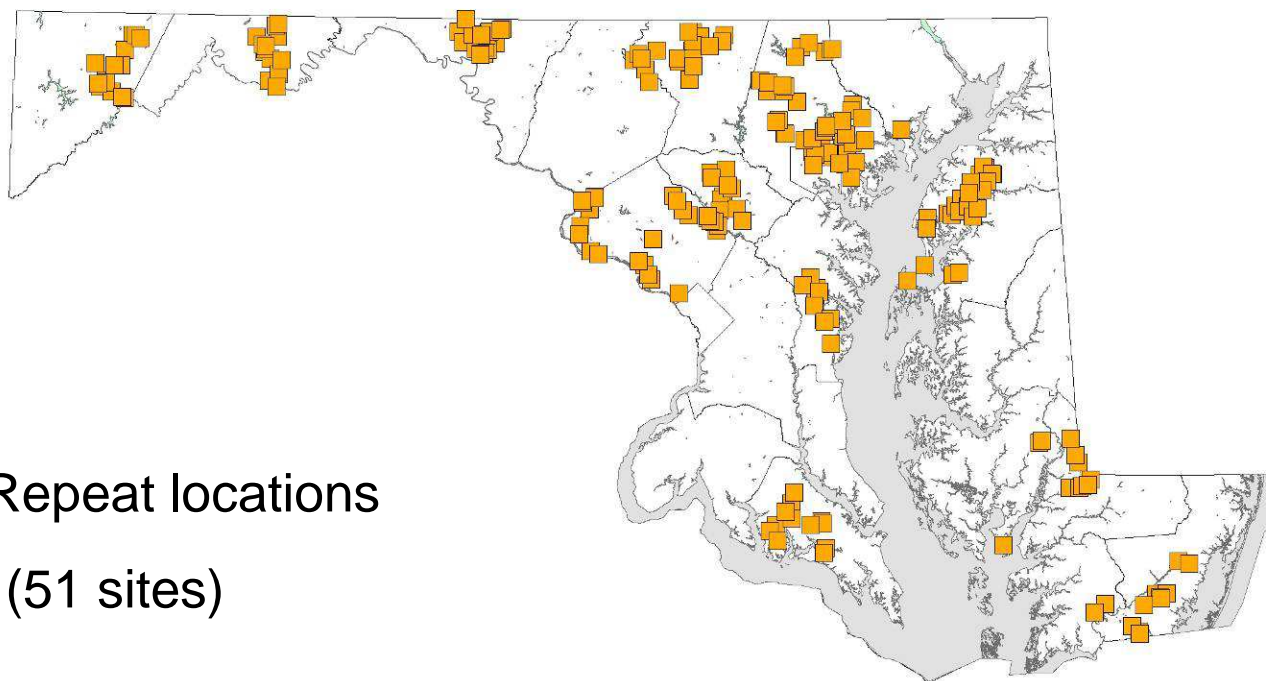
50 Non-tidal stations

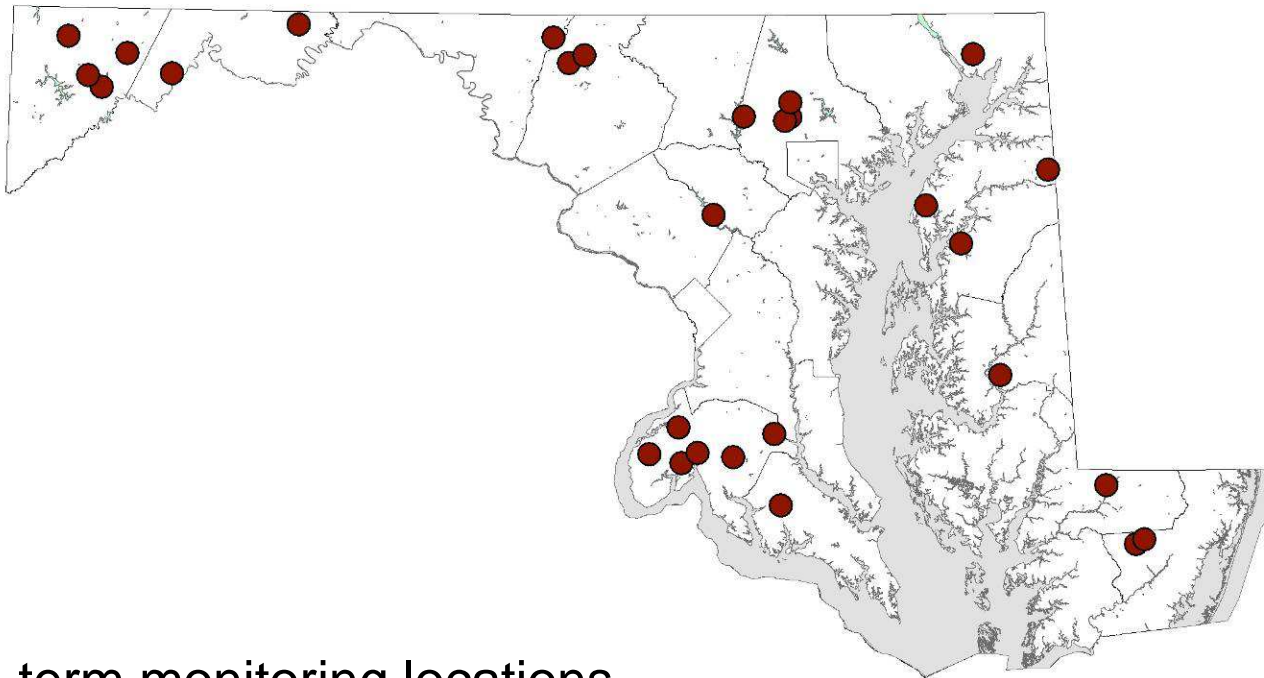(37 Surber sites, 13 multiplate)

# MBSS – Round 4



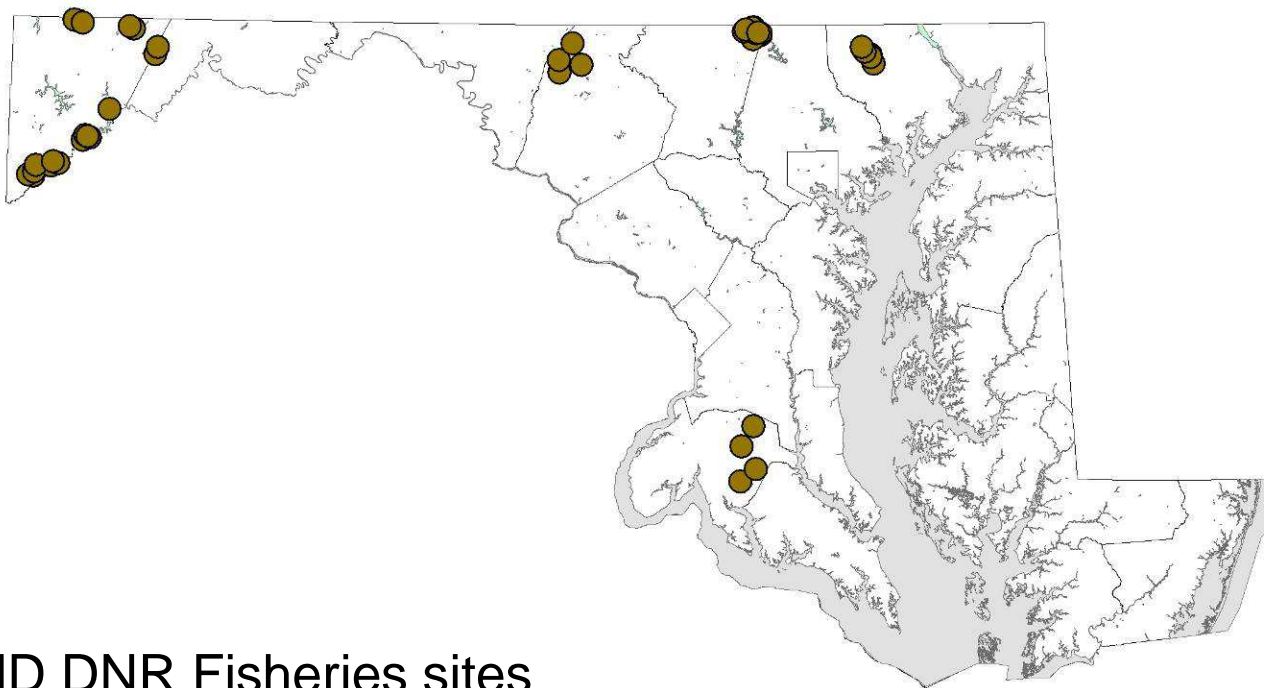1996 Repeat locations

(54 sites)

# MBSS – Round 4



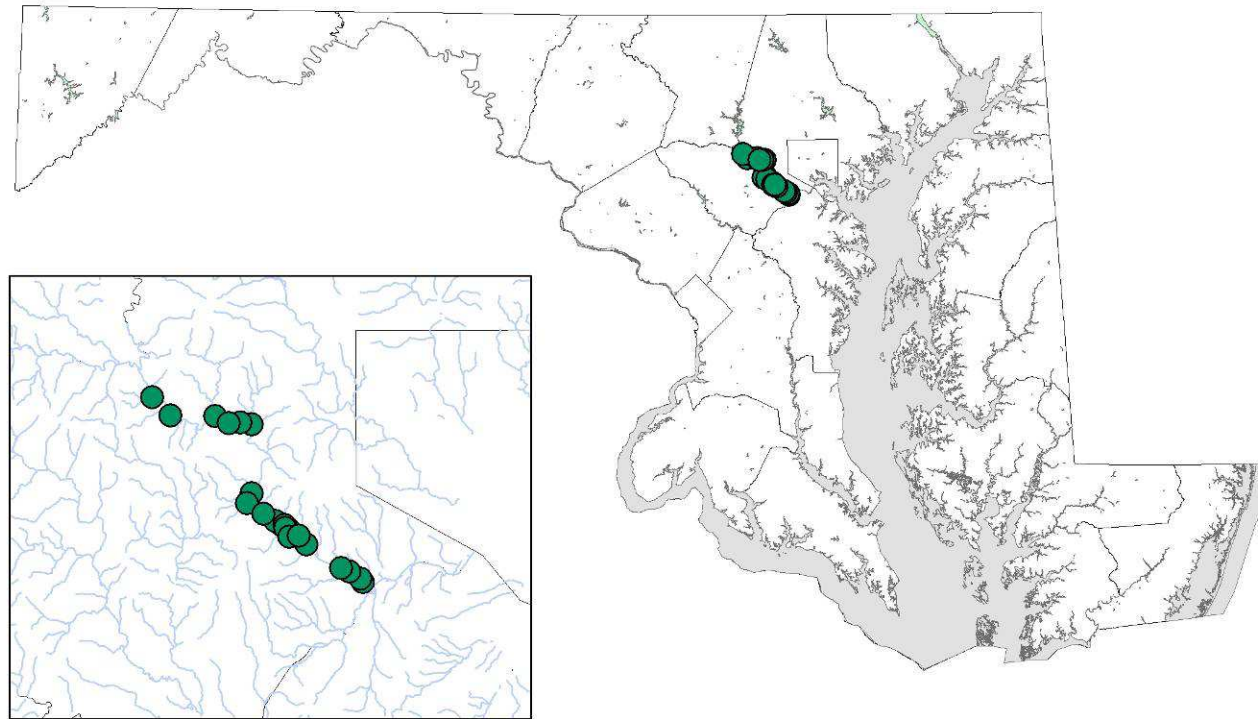2002 Repeat locations

(51 sites)

# MBSS – Sentinel Sites



Long-term monitoring locations

(29 sites)

# MBSS – Fisheries
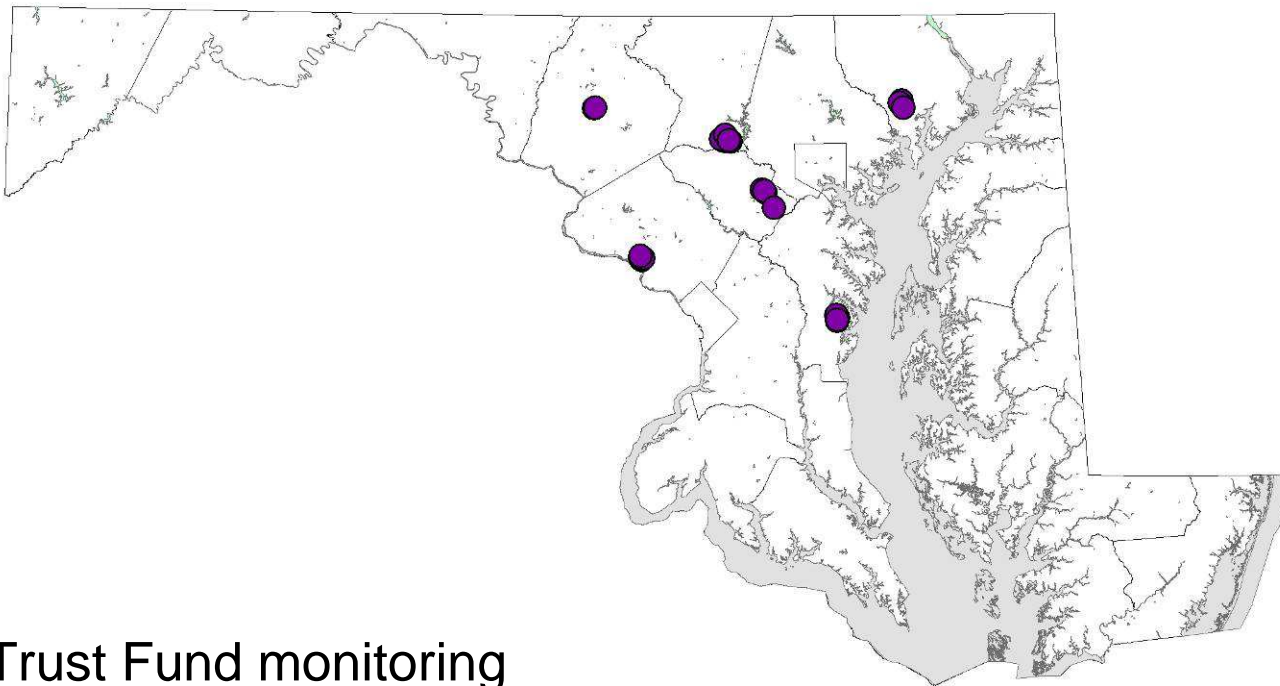
MD DNR Fisheries sites

(32 Temperature, 13 MBSS)

# MBSS – Patapsco Project



23 Patapsco dam removal sites
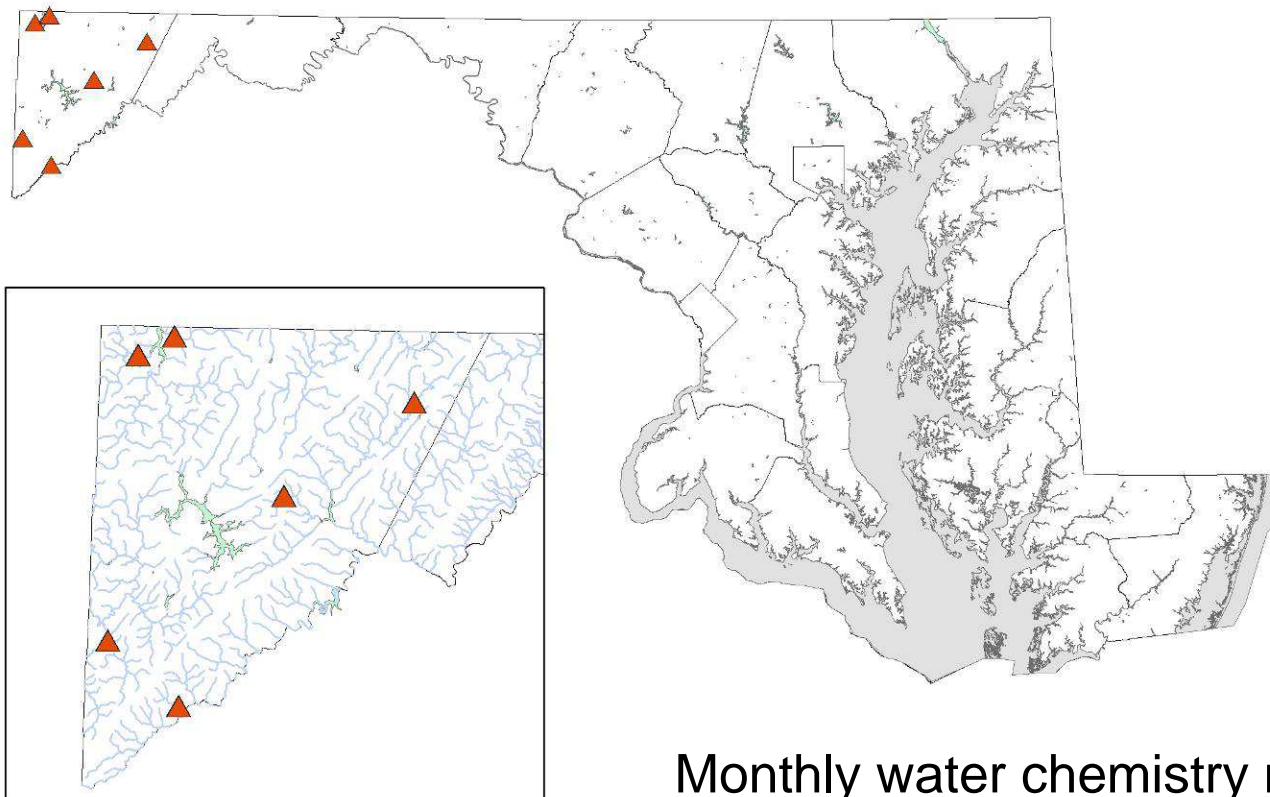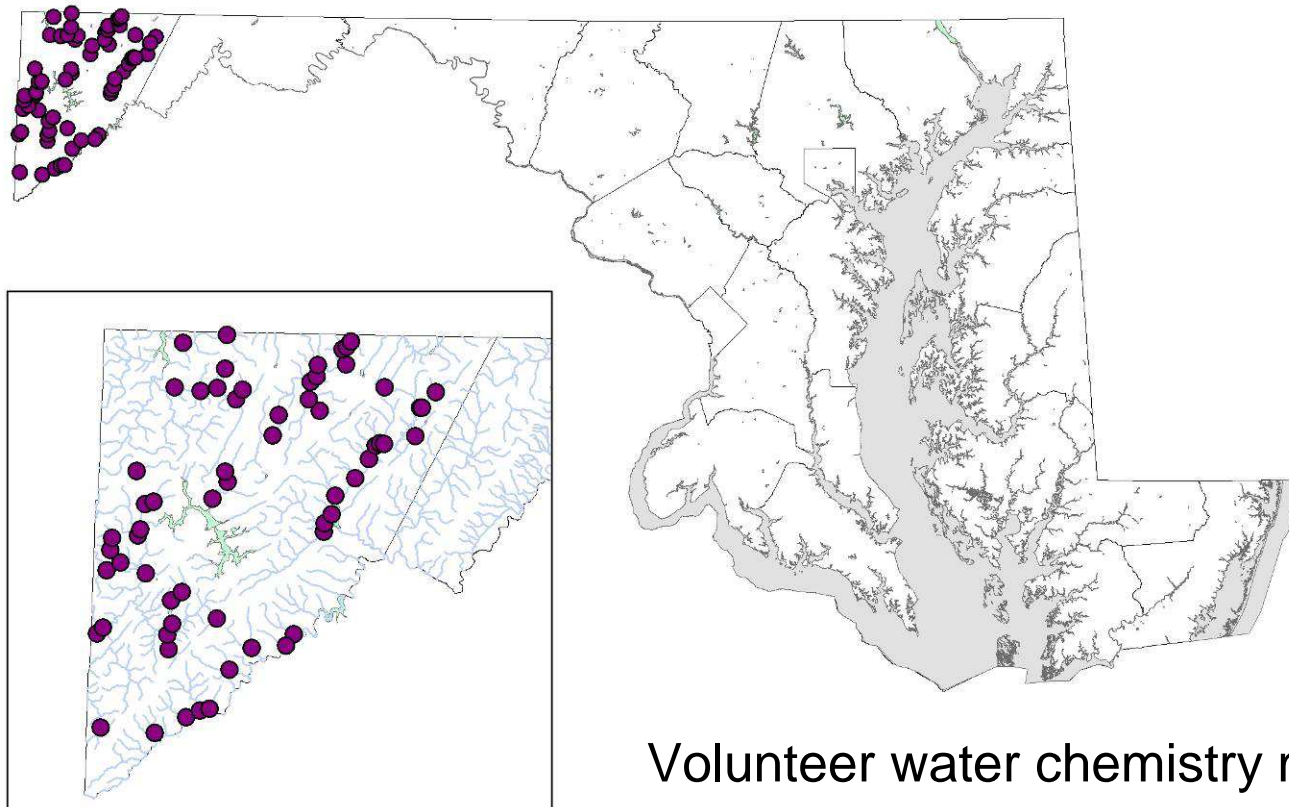
# MBSS – Restoration Streams



Trust Fund monitoring

(36 sites)

# MBSS – Marcellus Intensive Sites



Monthly water chemistry monitoring

(6 sites)

# MBSS – Marcellus Monitoring Coalition (MMC)
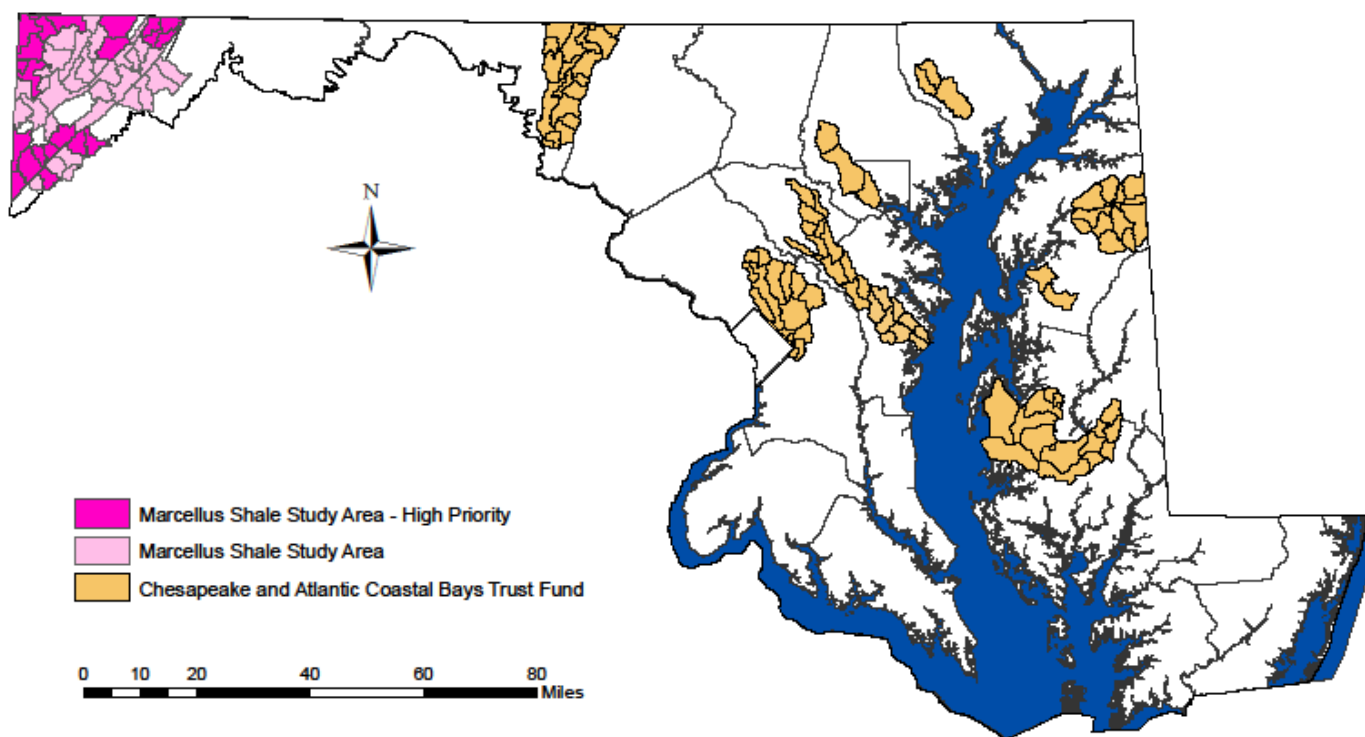


Volunteer water chemistry monitoring

(63 sites)

# Maryland Stream Waders

MARYLAND
*Smart, Green & Growing*

# 2016 Maryland Stream Waders Subwatersheds



Marcellus Shale Study Area - High Priority

Marcellus Shale Study Area

Chesapeake and Atlantic Coastal Bays Trust Fund

0  10  20  40  60  80 Miles

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Monitoring and Non-tidal Assessment Division
Phone: (877) 620 - 8DNR (x8623)
Web: www.dnr2.maryland.gov/streams/Pages/streamWaders.aspx

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

# Explore and Restore Maryland Streams
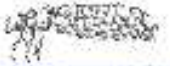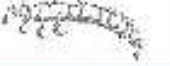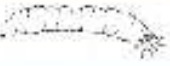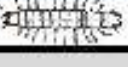
School Name:_____ Date:_____ Location:_____

## Biological Assessment: Macroinvertebrate Survey

| Benthic Habitat Sampled | | Riffles | Pools | Runs | Rootwads/leafpack/woody debris | Submerged Vegetation | Undercut Banks |
|---|---|---|---|---|---|---|---|
| | Sampled? ✓ | | | | | | |

**Check all of the macroinvertebrates that you find in your stream and calculate the stream's water quality rating**

| ✓ | SENSITIVE *to pollution* | ✓ | LESS SENSITIVE *to pollution* | ✓ | SOMEWHAT TOLERANT *to pollution* | ✓ | TOLERANT *to pollution* |
|---|---|---|---|---|---|---|---|
| | Casemaker Caddisflies | | Net Spinning Caddisflies | | Clams | | Aquatic Worms |
| | Mayflies | | Crane Flies | | Mussels | | Black Flies |
| | | | | | Planaria | | Midge Flies |
| | Stoneflies | | Dragonflies | | Gilled Snails | | Leeches |
| | | | | | | | Lunged Snails |
| | Water Pennies | | | | Crayfish | | Damselflies |
| | Hellgrammites | | Riffle Beetles | | Scuds | | Aquatic Sowbugs |
| | # check marks _____ | | # check marks _____ | | # check marks _____ | | # check marks _____ |
| | # above x 3= | | # above x 2= | | # above x 1= | | # above x 0= |

**Biological Water Quality Rating:**

Add up the numbers you calculated for all four categories above.

Write the total # here:_____

Circle the rating that corresponds to the total of your macroinvertebrate count.

**Good: >22**          **Fair: 17-22**          **Poor: 11-16**          **Very Poor: <11**

[http://maryland.maps.arcgis.com/apps/webappviewer/index.html?id=c2be1224a67141d08ae478fead70bff7](http://maryland.maps.arcgis.com/apps/webappviewer/index.html?id=c2be1224a67141d08ae478fead70bff7)